DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-014314
Date Inspected: 22-May-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1330
Location: Job Site

CWI Name: As noted in Summary

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girder

Summary of Items Observed:

This Quality Assurance Inspector (QAI), was present at the Self Anchored Suspension (SAS) job site. The following items were observed; see individual item numbers in the body of this report for further details.

Field Splice 3E/4E
1, Side Plate E. Preliminary Ultrasonic Testing of weld repairs in process.

Field Splice 5E/6E
2, Top plate A, SAW welding of top face in process.

Field Splice 1W-2W
3. Bottom Plate D, finish grinding of S stiffeners in process.
4, Side Plate E. Ultrasonic Testing of weld in process.

Field Splice 2W-3W
5. Side Plate C, welding C1 side 1 in process.

1, The QA inspector observed the NDT technicians Tom Pasqualone and Mr. Steve McConnell perform preliminary ultrasonic testing of the complete joint penetration (CJP) groove weld side plate field splice 3E/4E-C1 and C2. The weld repairs were scanned utilizing a GE USM-35. The testing was performed in accordance with the approved procedure SE-UT-D1.5-CT-100 Rev.4. Welds were examined and accepted in accordance with AWS D1.5-2002 in the longitudinal and transverse direction. Mr. McConnell reported that final testing would be

performed at 1430 hours on this date.

The QA inspector performed ultrasonic verification testing of the complete joint penetration (CJP) groove weld side plate field splice 3E/4E-C1 and C2. The ultrasonic testing (UT) was performed to verify the weld meets the requirements of the contract documents and AWS D1.5-2002. The weld and base metal were scanned utilizing a Krautkramer Branson USN 60 for the following scans. The base metal lamination check was performed with a 1. 0"dia. round 2.25 MHz transducer. The shear wave scan was performed with a 0.75" x 0.625" 2.25 MHz transducer on a 70 degree angle wedge from face B. Scanning patterns A, B, C, and E were utilized. The welds examined were found acceptable in accordance with AWS D1.5- 2002 table 6.3 and the contract documents. The QA inspector concurred with the NDT level II technician's assessment. An Ultrasonic Test Report (TL-6027) for the welds that were tested was generated for this date.

2. The QAI observed the Submerged Arc Welding (SAW) of the complete joint penetration (CJP) groove weld of the transverse top deck plate field splice 5E/6E, Segments 1A through 5A. The welding was performed by the welding operators Jordan Hazelaar, ID-2135 (A1 to A3) and Dan Ieraci, ID-3232 (A3 to A5) utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The welding was observed by Quality Control (QC) Inspectors Bonifacio Daquinag. The minimum preheat temperature of 60 degrees Celsius and maximum interpass temperature of 230 degrees Celsius was verified by the QA inspector utilizing Tempilstik temperature indicators. The SAW fill pass by Mr. Hazelaar, average amperage of 550 DC and voltage of 32.1 DC at the welding head gages and average travel speed of 378 millimeters per minute were verified to be within the WPS parameter ranges of 550 to 686 DC amps, 29.9 to 34.8 DC volts and travel speed of 337 to 814 millimeters per minute by QA inspector. The SAW fill pass by Mr. Ieraci, average amperage of 580 DC and voltage of 31.9 DC at the welding head gages and average travel speed of 375 millimeters per minute were verified to be within the WPS parameter ranges of 550 to 686 DC amps, 29.9 to 34.8 DC volts and travel speed of 337 to 814 millimeters per minute by QA inspector. At approximately 1100 hours on this date, welding was completed on segments A1 to A3, and appears to be in general compliance with contract documents. Welding of segments A3 to A5 was not completed during this QA inspectors shift.

3. The QA inspector periodically observed the in process grinding of the complete joint penetration (CJP) groove weld of the bottom plate field splice 1W/2W vertical stiffeners. After the removal of weld run-off tabs was complete the cut edges were ground to remove slag and notches. The work was not completed on this date and appears to be in general compliance with contract documents.

4. The QA inspector observed the NDT technicians Tom Pasqualone and Mr. Steve McConnell had performed ultrasonic testing of the complete joint penetration (CJP) groove weld side plate field splice 1W/2W-E1 and E2. The weld was scanned utilizing a GE USM-35. The testing was performed in accordance with the approved procedure SE-UT-D1.5-CT-100 Rev.4. The weld was examined and accepted in accordance with AWS D1. 5-2002 in the longitudinal and transverse direction. The following indications were marked on the exterior face of the weld on this date.
Weld E1, Y=525mm, X=+9mm, L=50mm, D=10mm, no rating marked.
Weld E1, Y=550mm, X=-6mm, L=35mm, D=10mm, rating +6db.
Weld E1, Y=1940mm, X=-6mm, L=250mm, D=15mm, rating +6db.
Weld E2, Y=315mm, X=+3mm, L=80mm, D=10mm, no rating marked.
Weld E2, Y=680mm, X=+7mm, L=75mm, D=12mm, no rating marked.

5. The QAI observed the automated Flux Cored Arc Welding (FCAW-G) process of the of the complete joint penetration (CJP) groove weld side plate field splice 2W/3W-C1. The welding was performed from the interior face by the welding operator Song tao Huang ID-3794 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1 Rev. 0 in the vertical up (3G) welding position. The welding was observed by Quality Control (QC) Inspector Inspector Bernie Docena. The minimum preheat temperature of 60 degrees Celsius and maximum interpass temperature of 230 degrees Celsius was verified utilizing Tempilstik temperature indicators. The FCAW-G fill pass average amperage of 250 DC, voltage of 24.3 DC at the welding lead and average travel speed of 300 millimeters per minute were verified to be within the WPS parameter ranges of 214 to 267 DC amps, 20.9 to 24.4 DC volts and travel speed of 188 to 455 millimeters per minute by the QA inspector. At the end of this shift, the welding was not completed and appears to be in general compliance with contract documents.

Summary of Conversations:

General conversations with QC personnel regarding welding locations and schedule. And as noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi, (916)813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Lanz,Joe	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer